

A natural hybrid of *Polyommatus bellargus* (ROTTEMBURG, 1775) × *P. albicans* (HERRICH-SCHÄFFER, 1852) and notes about a probable hybrid of *P. punctifera* (OBERTHÜR, 1876) × *P. albicans* (Lepidoptera: Lycaenidae)

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Abstract: This paper describes and illustrates, for the first time, a natural hybrid specimen of *Polyommatus bellargus* × *P. albicans*. Because of the very similar morphology of this hybrid specimen and an “enigmatic specimen of *Polyommatus*” caught in Morocco (TARRIER 2002), it is presumed that the latter represents another previously unknown hybridization between *P. punctifera* × *P. albicans*.

Un híbrido natural de *Polyommatus bellargus* (ROTTEMBURG, 1775) × *P. albicans* (HERRICH-SCHÄFFER, 1852) y notas sobre un probable híbrido de *P. punctifera* (OBERTHÜR, 1876) × *P. albicans* (Lepidoptera: Lycaenidae)

Resumen: Se describe e ilustra, por primera vez, un espécimen híbrido natural de *Polyommatus bellargus* × *P. albicans*, el cual, según la bibliografía entomológica actual es desconocido. Debido a la muy similar morfología de este anterior espécimen híbrido con el “enigmático *Polyommatus*” capturado en Marruecos y mencionado en TARRIER (2002), creemos que éste también es un espécimen híbrido, pero de *P. punctifera* × *P. albicans*, un híbrido también desconocido hasta ahora.

Ein natürlicher Hybrid von *Polyommatus bellargus* (ROTTEMBURG, 1775) × *P. albicans* (HERRICH-SCHÄFFER, 1852) samt Notizen zu einem möglichen Hybriden von *P. punctifera* (OBERTHÜR, 1876) × *P. albicans* (Lepidoptera: Lycaenidae)

Zusammenfassung: In dieser Arbeit wird erstmalig ein natürlicher Hybrid von *Polyommatus bellargus* × *P. albicans* beschrieben, eine Form, die bisher aus der entomologischen Literatur unbekannt geblieben ist. Aufgrund der großen morphologischen Übereinstimmungen dieses Hybriden und eines „seltsamen Einzelstücks von *Polyommatus*“ aus Marokko (TARRIER 2002) wird vermutet, daß letzterer ebenfalls einen bisher unbekannt gebliebenen Hybriden von *P. punctifera* × *P. albicans* darstellt.

Introduction

In lepidopterological literature, numerous publications are related to possible cases of hybridization encountered in nature as a result of intercrossing between different species of Lepidoptera. Although such cases are somewhat uncommon or even exceptional, it seems to be that these genetic exchanges are rather active between different species of the genus *Polyommatus* KLUK, 1801.

Among the natural hybrids of *P. bellargus* and other species of the genus we may find the following:

- Hybrid “*polonus*,” described by ZELLER (1845) as a new species based on three specimens collected in Poland. In SEITZ (1906), “*polonus*” was treated as a “a geographical form” of *P. bellargus*. The chromosomal studies of de LESSE (1960, 1961, 1969) revealed that

“*polonus*”, as well as other taxa previously considered aberrations, were actually hybrids of *P. coridon* (PODA, 1761) × *P. bellargus*, with a middle-range chromosome number (n: 51–72) between both previous species. Hybrid specimens of the same type have been collected in the northern Iberian Peninsula (Pyrenees), in the French Alps, central Italy, Germany, Greece, etc.

- *P. caelestissima* (VERITY, 1921) × *P. albicans arragonensis* (GERHARD, 1851) (hybrid “*caerulescens*” TUTT), in TUTT (1909), SCHURIAN & HÄUSER (1979), etc. This natural hybrid occurs principally in areas of the province Teruel (Spain).
- *P. coridon* × *P. daphnis* ([DENIS & SCHIFFERMÜLLER], 1775) (hybrid “*cormion*” NABOKOV, 1941), described as a species by NABOKOV (1941) and subsequently considered as a hybrid (e.g. SMELHAUS 1947, DUJARDIN 1969, SCHURIAN 1997).
- *P. coridon* × *P. damon* (hybrid “*corydamon*”) (REBEL, 1929).

TOLMAN & LEWINGTON (1997) and TOLMAN et al. (1999) state that no hybrids are known between *P. bellargus* and *P. albicans*.

Description of a hybrid specimen of *P. bellargus* × *P. albicans*.

On 13. vi. 1993, a strange ♂ specimen was found in the Sierra de Alfacar (N. Alfacar, province of Granada, Spain). The upperside colouring (Fig. 1) resembles *P. coridon*, but has a different and distinct tone of blue (brilliant bright blue, with silver reflexions) and a larger wingspan than any *P. coridon* observed in the Iberian Peninsula (intermediate in size between *bellargus* and *albicans*). The underside markings (Fig. 2), lunules and black spots, clearly show the general pattern observed in other species of the genus.

The specimen has both fore and hindwing of the right side seriously damaged (torn) and additionally one wing shows clear signs of partial unfolding (wrinkled, asymmetric) which is symptomatic of problems after emergence from pupae. Accordingly, the perfect preservation of the left side of the wings allowed us clearly to observe the morphological features in detail.

Although the specimen was principally considered a hybrid of *P. bellargus* × *P. albicans*, the fact that examples of such a hybridisation were unknown or even that their existence was doubtful (not proved to certainty) was totally ignored.

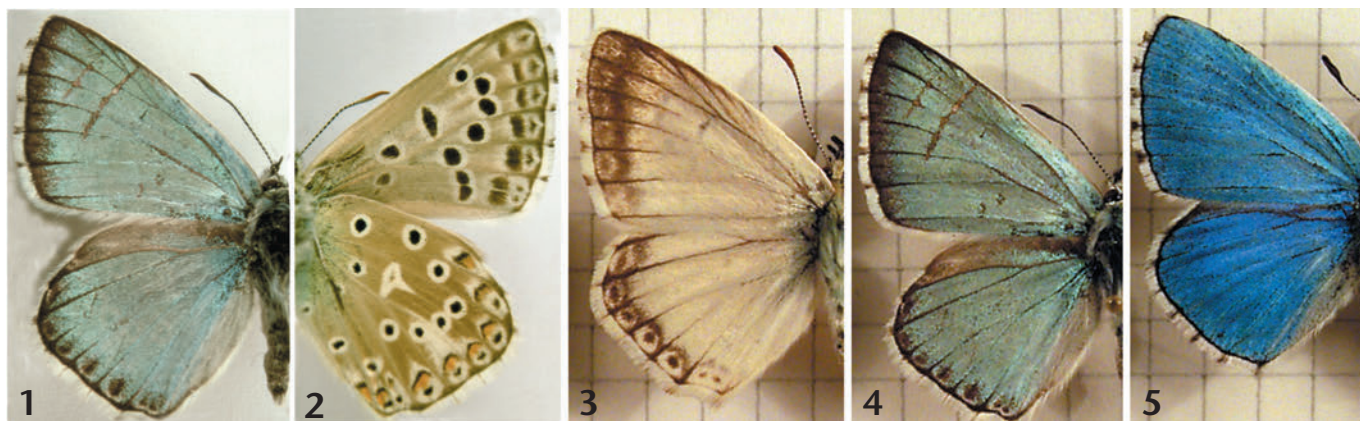


Fig. 1: Upperside of hybrid *P. bellargus* × *P. albicans*. Fig. 2: Underside. — Fig. 3: ♂ of *P. albicans*. Fig. 4: Hybrid ♂ *P. bellargus* × *P. albicans*. Fig. 5: ♂ of *P. bellargus* (all from Sierra Alfacar).

The underside markings correspond very well to those of specimens of *P. bellargus* × *P. coridon* (hybrid “*polonus*”), but in comparison specimens are somewhat smaller in wingspan.

It is well known that *P. coridon* does not occur in the southern half of the Iberian Peninsula. The *Meleageria*/*Lysandra*-group of the genus *Polyommatus* is represented in the Sierra de Alfacar [the type locality of *Polyommatus nivescens* (KEFERSTEIN, 1851), *Plebejus pylaon hespericus* (RAMBUR, 1839), *Colias alfacariensis* (RIBBE, 1905)] solely by *P. albicans* and *P. bellargus*. This fact quite obviously simplified the diagnosis of its relationship. On the other hand we would like to point out that if this specimen had been caught, for example, in northern Spain, where the chance of co-occurrence of up to four different species of this group of *Polyommatus* is very likely, the interpretation would have been rather difficult or even hypothetical, bearing in mind that only two combinations (the hybrids “*polonus*” and “*caerulelescens*”) have been recognised or conveniently documented up to now.

When comparing the hybrid specimen (Fig. 3) with specimens of *P. albicans* which occur in the Sierra de Alfacar (the local variety of *albicans* has a clear whitish upperside colour) and *P. bellargus* (which occurs in the same vicinity), differences are quite distinct and well defined. It is noticeable that the hybrid specimen cannot be assigned to either one of the two species. Its peculiar blue tone seems to be the result of a mixture between the intense sky-blue of *P. bellargus* and the creamy white of *P. albicans*. The wing veins are conspicuously outlined with dark scales and darken towards the margins, particularly on the forewing of the hybrid, as in *P. albicans* but lacking in *P. bellargus*. The black border on the forewing (not present in *bellargus*) of about 1 mm width is darker than in *P. albicans*, but similar to some races of *P. coridon*.

It is interesting to note that the collecting date of 13. vi. coincides with the end of the flight period of *P. bellargus* (1st generation v.–vi.; 2nd generation vii.–ix.), but that it is too early for the local flight period of *P. albicans*, which is normally on the wing from mid-July to August.

About a probable hybrid of *P. punctifera* × *P. albicans*

In TARRIER (2002) a specimen is shown, caught in the Western Rif, Morocco, 29. iv. 2000. The author considered three possibilities to assign his specimen:

1. as a hybrid of *P. punctifera* × *P. albicans*;
2. as a specimen of *P. coridon* (a taxon not known from Africa); or
3. as a new species.

By now it looks like that he has not chosen any of the three possibilities, as he declares: “Nous espérons que d’autres ‘entomologistes-policiers’ rouvriront le présent dossier, reprendront l’enquête et qu’à la faveur de meilleures circonstances, la mènerons à bonne fin”. Well, we open the previous “dossier”:

The illustrated specimen (TARRIER 2002: 401, figs. 1, 4) looks very much like the hybrid described above from the Sierra de Alfacar (Granada). This strengthens the previous interpretation about the relationship of the former, based on the differing blue tone of the upperside of its wings (the difference in tone is also relevant even in specimens of the hybrid “*polonus*”). The dark marginal band has a similar width as in the hybrid of *bellargus* × *albicans*. Furthermore, upperside hind wing markings and all underside markings are identical to the hybrid described above.

Externally, *P. punctifera* resembles *P. bellargus*, including the presence of submarginal black spots on the upperside of the hindwings, which may also be developed to some extent in specimens of *bellargus* (the taxon *alfacariensis* RIBBE, 1905 is based on this character) from the south of the Iberian Peninsula (e.g. Sierra Nevada, Sierra de Alfacar and other nearby localities). It is, therefore, logical to think that, if the external morphological appearance of these two species are so similar to each other, that if either of these should mate with *P. albicans*, this would obviously result in morphologically very similar hybrids.

TARRIER (pers. comm.) reported that for the time being he had not found *P. albicans* in the area where his “enigmatic” capture took place.

A certain variation in the ground colour on the upper side or a variability of its phenotype is considered as normal in hybrids; besides that the colouration of *P. albicans* is also variable, depending on the location (adults of *P. albicans* in the Moroccan Riff are darker than those of the Sierra de Alfacar). The blue wing colour tone of *P. bellargus* as well as of *P. punctifera* varies to a similar extent.

Acknowledgements

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Hessenfauna

17. *Ditula angustiorana* (HAWORTH, 1811) in Hessen gefunden (Lepidoptera: Tortricidae, Tortricinae, Archipini)

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Im Juli 2005 fand ich in Offenbach am Main, südlich des Stadtteils Bieber-Waldhof an der dortigen S-Bahn-Haltestelle, einen im Sitzen etwa 9 mm langen Falter von typischem Tortricidenhabitus, der sich auf einem Blatt der Kratzbeere (*Rubus caesius* L., Rosaceae) sonnte.

Schon bei der Präparation fiel die leuchtend zimtbraune Grundfärbung der Vorderflügel mit einer deutlichen hellen Schrägbinde, mehreren rosa-bräunlichen Zeichnungselementen mit kleinen, bleigrauen, metallisch glänzenden Flecken auf, die mit den dunkel schiefergrauen Hinterflügeln mit weißlichen Fransen kontrastierten.

Trotz der auffälligen Zeichnung scheiterte der Versuch, den Falter mit Hilfe des kleinen Bestimmungsbuches von RAZOWSKI (2001) zu identifizieren. Erst anhand der neueren Tortricidenmonographie von RAZOWSKI (2002) wurde die Bestimmung möglich: Es handelte sich um ein Weibchen von *Ditula angustiorana* (HAWORTH, 1811), im zitierten Werk in der Gattung *Batodes* GUENÉE, 1845 geführt.

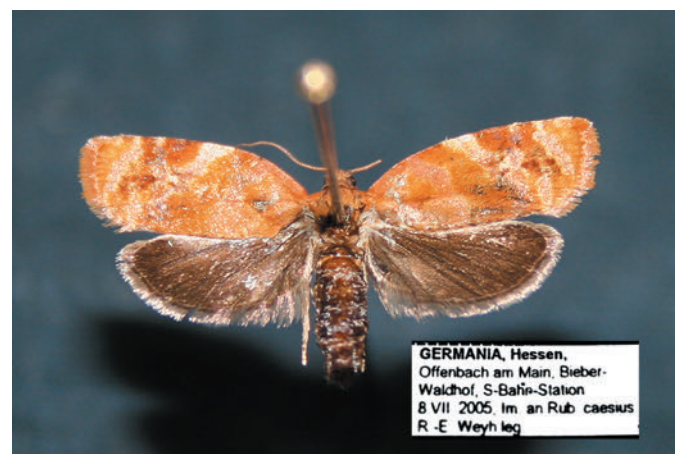


Abb. 1: *Ditula angustiorana* (HAWORTH, 1811) aus Hessen: Offenbach am Main, 8. VII. 2005. (Etikett nicht im gleichen Maßstab wie der Falter.)